

1       1.     A method for making a connection for composite pipe comprising:  
2              attaching a connector having at least one trap to a liner portion of a segment of  
3     composite pipe, the pipe comprising a plurality of filament fibers wound around the liner;  
4              winding the plurality of filament fibers across the connector, wherein tension is  
5     continuously maintained on the filament fibers across the at least one trap;  
6              compressing the plurality of filament fibers over the at least one trap; and  
7              curing a binder which impregnates the filament fiber.

1       2.     The method as defined in claim 1 wherein the fibers initially bridge the at least  
2     one trap.

1       3.     The method as defined in claim 1 wherein the compressing comprises wrapping  
2     the fibers proximate the at least one trap with a fiber hoop wrap.

1       4.     The method as defined in claim 3 wherein the fiber hoop wrap comprises a  
2     material having a negative coefficient of thermal expansion.

1       5.     The method as defined in claim 1 further comprising wrapping the trap area with  
2     heat shrinkable tape and heating the tape.

1       6.     The method as defined in claim 2 wherein the connector comprises a plurality of  
2     traps, the filament fibers wound under tension so that each of the traps is initially bridged  
3     by the filament fibers.

1       7.     The method as defined in claim 6 further comprising compressing the filament  
2     fibers in each of the traps prior to curing the binder.

1       8.     The method as defined in claim 7 wherein the compressing comprises wrapping  
2     the fibers in each of the traps with a fiber hoop wrap.

1       9.     The method as defined in claim 6 wherein each of the hoop wraps has an elastic  
2     modulus related to its position with respect to an end of the connector.

1       10.    The method as defined in claim 6 wherein a flank angle of each trap is related to  
2     the position of each trap with respect to an end of the connector.

1       11.    The method as defined in claim 6 wherein a depth of each trap is related to the  
2     position of each trap with respect to an end of the connector.

1       11     The method as defined in claim 6 wherein a wall thickness of the connector  
2     below each trap is related to the position of each trap with respect to the end of the  
3     connector.

1       12.    The method as defined in claim 6 wherein a width of each trap is related to the  
2     position of each trap with respect to an end of the connector.

1       13.    An connector for joining a segment of composite pipe comprising:  
2              an end connector having at least one fiber trap on an outer surface thereof, the end  
3     connector attached to a liner portion of the segment of composite pipe;  
4              fibers forming an outer surface of the segment of composite pipe, the fibers  
5     wound around the at least one trap under tension; and  
6              a binder which impregnates the fibers, the tension being maintained on the fibers  
7     in the trap during cure of the binder.

1       14.    The connector as defined in claim 13 wherein the further comprises a fiber hoop  
2     wrap wound around the fibers in the trap to compress the fibers therein.

1       15.    The connector as defined in claim 14 wherein the fiber hoop wrap comprises a  
2     material having a negative coefficient of thermal expansion.

1       16.     The connector as defined in claim 13 further comprising heat shrinkable tape  
2     wrapped in the trap area.

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2       17.     The connector as defined in claim 13 wherein the connector comprises a plurality  
3     of traps.

1       18.     The connector as defined in claim 17 wherein the fibers in each of the traps is  
2     covered with a fiber hoop wrap.

1       19.     The connector as defined in claim 17 wherein each of the hoop wraps has an  
2     elastic modulus related to its position with respect to an end of the connector.

1       20.     The connector as defined in claim 17 wherein a flank angle of each trap is related  
2     to the position of each trap with respect to an end of the connector.

1       21.     The connector as defined in claim 17 wherein a depth of each trap is related to the  
2     position of each trap with respect to an end of the connector.

1       22     The connector as defined in claim 12 wherein a connector wall thickness below  
2     each of the traps is related to a position of each trap with respect to the end of the  
3     connector.

1       23.     The connector as defined in claim 17 wherein a width of each trap is related to the  
2     position of each trap with respect to an end of the connector.